

## RESEARCH CONCEPT

### *Development of new testing approaches for different life stages:*

Testing approaches for early (prenatal and early postnatal) developmental toxicity have been developed for some time, although there are still gaps in evaluation of certain endpoints after early exposures, e.g., immunotoxicity, respiratory, cardiovascular, renal, and liver function, and cancer. Effects of exposures in the periadolescent period have not been studied well at all. Yet many teenagers are in the work force, and may be exposed to toxic chemicals, particularly in agricultural settings.

At the other end of the spectrum, exposures in older age groups are not well-evaluated in current toxicity testing approaches. Only the 2-year chronic/carcinogenicity testing protocol includes exposures into later ages, and the effects of agent exposures may be masked or exacerbated by ad libitum diet, obesity and its consequences. It has been clearly shown that diet restriction in rodents will increase lifespan and reduce disease. Thus, testing of rodents at later ages in diet-restricted and unrestricted situations may shed light on factors in the aging population that are important in the toxicity of various exposures. With the current trend toward an aging workforce, this information may be of utility in setting more appropriate exposure limits to protect the health of this segment of the population.